North American Water-Mites

INTRODUCTION

Fewer than fifty species of water-mites were known from North America in 1900. Now more than two hundred and seventy species are known, largely through the work of Dr. Ruth Marshall. During her forty years' study of the group Miss Marshall amassed a collection containing abundant material of nearly every species known from this continent. In addition to the type material of her own species, the Marshall Collection contains most of the Wolcott types, paratypes from Lavers, and a few types of species described from North America by Lundblad, Koenike, and Karl Viets. This collection was deposited in Chicago Natural History Museum in 1945. A listing of the types in the Marshall Collection was started and, as the work progressed, it was apparent that with a little expansion a full listing of the North American water-mites could be prepared. The species represented by type material in the Marshall Collection are indicated by the designation "[Marshall Collection]" following the citation. A detailed listing of the types is not possible at present for two reasons. Types of the first few species described by Miss Marshall were destroyed in a fire and subsequent neotype selections have not been published. In most of the descriptions, the type series was not clearly indicated and a formal designation of the holotype was not made. Further clarification of the type material should be undertaken through revisionary studies.

The synonymies in the check list represent, as far as is possible to ascertain, the views of Miss Marshall as expressed in her papers, and, in a few cases, in her notes. Subgenera were rarely indicated by her, hence they can be listed in only a few cases. Furthermore, most authors have defined the subgenera in the course of limited faunistic studies, with the result that general usage of subgenera is difficult. Also, the understanding of the Nearctic fauna is so limited that the use of subgenera is not particularly helpful in most cases. The subgenera of *Hydrachna* and *Arrenurus* are obvious exceptions. It is suggested (Lundblad, 1944) that intergradation between the subgenera *Truncaturus*, *Megaluracarus*, and *Micruracarus* of the

genus *Arrenurus* is a basis for suppressing the use of these categories. The definition of the subgenera is, in respect to the few marginal forms, clearly arbitrary. Regardless of the decision in this matter, it is obvious that each of the subgenera indicates a phyletic line and is of great practical value in breaking up a genus of tremendous size.

In a few cases there is uncertainty about the selection of genero-types, a question on which I do not feel qualified to pass judgment. Current usage by European workers has been followed in these cases. Viets (1949) gives a full discussion of the two major name changes affecting the species considered here. *Atractides* must be applied in place of *Megapus* and the species that have been included in *Atractides* must be referred to under the name *Torrenticola*. This unfortunate change calls for changing the family name Atractideidae to Torrenticolidae. The genus *Acercus* must now be referred to under the name *Tiphys*.

Families of water-mites have been defined entirely by European investigators. The system adopted today was outlined in the papers of Thor, but it has been modified and developed through the research of Viets and Lundblad. Lundblad's classification (1941b) has been followed here because it is the most recent complete listing of the genera. It differs only slightly from that of Karl Viets (1936).

The forty families of water-mites, although closely related, cannot be assigned to an inclusive taxonomic category. Many authors have chosen to cite Hydrachnellae or Hydracarina (Latinized names for water-mites) in the same fashion as a taxonomic category. Since there is general agreement that the group is an ecological and not a phyletic one, such a practice seems illogical and misleading. The various systems for grouping the water-mites with the prostigmatid mites suffer from the lack of any critical information on the internal and skeletal anatomy.

I am aware that much critical study is necessary to clarify the status of many of the groups listed below. Furthermore, many genera known to occur in North America are not yet recorded in the literature. Considering these matters, this check list is offered only as a summary of our published knowledge of the North American water-mites.

The preparation of this list has been greatly facilitated by the kind consideration and helpful criticism of Rupert L. Wenzel and Henry S. Dybas. I am indebted to David R. Cook for his help in reviewing and checking the list.

HISTORY

Before the latter part of the nineteenth century there were only a few publications on our water-mite fauna, all inadequate. The first usable paper, published by Koenike in 1895, gave identifications and descriptions of a surprisingly good collection of water-mites made by J. B. Tyrrell. Around the turn of the century Robert H. Wolcott published a few papers. His key to the genera of the world (1905) was later abridged and included in *Fresh-Water Biology* (1918). The classification suggested in this work is very much out of date due to the subsequent work of various European students.

Between the years 1903 and 1946 Ruth Marshall published forty-one papers. Most of these papers deal with the still-water fauna of the mid-western states. Marshall's descriptions and illustrations form a workable basis for the identification of our water-mites, but it is regrettable that the results of these studies have never been assembled in the form of larger monographs or revisions. Two other significant papers have been published: a revision of the genus *Hydrachna* by Lundblad (1934), and an article by Lavers (1945) on the *Arrenurus* of the state of Washington. Only a few brief descriptive papers on the North American water-mite fauna have appeared since 1900.

Baker and Wharton (1952) have presented a key to, and synopses of, the water-mite families of the world. There are a few inconsistencies in the presentation, because the key, translated from Karl Viets (1936), has not been modified to conform with the classification followed in the family synopses, which were taken from Vitzthum (1940–43).

The most recent publication in this country is that of Pennak (1953), whose key (apparently taken from Wolcott, 1918) is preceded by an account of the biology of water-mites that is remarkably well done, considering the limitations of space. Omissions make the key of little value to the specialist, but probably serve to make the account a comprehensible and reasonably accurate introduction for the non-specialist who deals chiefly with the common genera.

GENERAL WORKS

None of the keys published in this country (Wolcott, 1905 and 1918; Pennak, 1953) are sufficiently complete for advanced studies of water-mites. Because of the uniformity, at least in generic representation, of the Holarctic fauna the excellent monographs on

the European fauna (Viets, 1936; Motas, 1928; and Lundblad, 1927) are indispensable basic references for any advanced work on the North American water-mite fauna. The volumes published by the Ray Society (Soar and Williamson, 1925–29), though lacking in some critical detail, are frequently helpful in supplying general information.

One meets with considerable difficulty in working with the mites that occur in our streams. Most of the genera are little known and many are not Holarctic; therefore, there is no single work that can be used for identifying these forms.

Attention should be called to certain works as sources of special information. The remarkable morphological diversity of water-mites is clearly demonstrated in the work of Motas (1928). Since 1928, Motas and his associates have done a creditable job of describing the subterranean fauna of the Balkans. Most of the work is summarized by Szalay (1949), although Motas' continued researches have added more forms since that summary. In addition to the fine treatments on the European fauna mentioned earlier, there are two other important faunistic studies, Karl Viets' study of the water-mites of Sumatra, Java, and Bali (1935) and the work of Lundblad (1941–44) on the South American fauna, which is a magnificently illustrated monograph. The extensive work on the African fauna has been reviewed and listed by Karl Viets (1953).

Family **HYDROVOLZIIDAE** Thor

Hydrovolziidae Thor, 1905, Zool. Anz., **28**: 509.

Genus **Hydrovolzia** Thor

Generotype: *Polyxo placophora* Monti.

Hydrovolzia Thor, 1905, op. cit., pp. 506–507.

gerhardi Mitchell, 1954, Chicago Acad. Sci. Nat. Hist. Misc., no. 134, pp. 3–6, figs. 1–3. [C.N.H.M. Collection]

?placophora Monti, 1905, Rend. Ist. Lomb. Sci. Lett., (2), **38**: 170–174, pl. 1, fig. 1, pl. 2, figs. 2–14.

Family **HYDRACHNIDAE** Leach

Hydrachnides Leach, 1815, Trans. Linn. Soc. London, **11**: 399–400.

Genus **Hydrachna** Müller

Generotype: *Hydrachna cruenta* Müller.

Hydrachna Müller, 1776, Zool. Danicae Prodromus, p. 188.

Subgenus **Hydrachna** *s. str.*

cruenta Müller, 1776, Zool. Danicae Prodromus, p. 190.

americana Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 63, pl. 3, figs. 25–27. [Marshall Collection]

var. *diminuata* Lundblad, 1934, Ark. Zool., **28A**, (3), p. 10, figs. 4*a*–4*d*.

magniscutata Marshall, 1927, Trans. Amer. Micros. Soc., **46**: 271–272, pl. 7, figs. 8–11. [Marshall Collection]

var. *reducta* Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 13–14, figs. 6*a*–6*e*, pl. 1, fig. 8, pl. 2, fig. 16.

var. *separata* Lundblad, 1934, op. cit., p. 15, figs. 5*e*–5*h*, pl. 1, fig. 5, pl. 2, fig. 15.

Subgenus **Scutohydrachna** Viets

Generotype: *Hydrachna dorsoscutata* Viets, 1933, Zool. Anz., **103**: 162–164, figs. 1–3.

Scutohydrachna Viets, 1933, Zool. Anz., **103**: 162.

Chitohydrachna Habeeb, 1950, Natural. Canad., **77**: 116.

crenulata Marshall, 1930, Trans. Wis. Acad. Sci., **25**: 247, pl. 5, figs. 6–7. [Marshall Collection]

?ennishonensis Habeeb, 1950, Natural. Canad., **77**: 116–117, figs. 7–11. [C.N.H.M. Collection]

hutchinsoni Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 20–21, figs. 10*a*–10*e*.

rotunda Marshall, 1930, Trans. Wis. Acad. Sci., **25**: 246–247, pl. 5, figs. 4–5. [Marshall Collection]

Subgenus **Diplohydrachna** Thor

Generotype: *Acarus globosa* Geer, 1778, Mem. hist. ins., **7**: 146–147, pl. 9, figs. 11–12.

Diplohydrachna Thor, 1916, Rev. Ruisse Ent., **16**: 46–47.

conjecta Koenike, 1895, Rev. biol. nord. Fr., **7**: pp. 145–146, pl. 8, figs. 9–11.

microscutata Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 65, pl. 3, figs. 28–30. [Marshall Collection]

hungerfordi Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 23–25, figs. 13*a*–13*f*, 18–19.

Subgenus **Tetrahydrachna** Lundblad

Generotype: *Hydrachna miliaria* Berlese.

Tetrahydrachna Lundblad, 1934, Ark. Zool., **28A**, (3), p. 30.

miliaria Berlese, 1888, Bull. Soc. Ent. Ital., **20**: 219.

bilunata Marshall, 1931, Trans. Wis. Acad. Sci., **26**: 314, pl. 8, figs. 26–27. [Marshall Collection]

Subgenus **Rhabdohydrachna** Viets

Generotype: *Hydrachna comosa* Koenike, 1896, Zool. Anz., **19**: 359–360.

Rhabdohydrachna Viets, 1931, op. cit., **93**: 184.

canadensis Marshall, 1929, (female only), Univ. Toronto Stud., Biol. Ser., no. 33, pp. 63–64, pl. 3, figs. 21, 22, 24. [Marshall Collection]

geographica Müller, 1776, Zool. Danicae Prodromus, p. 190 (Palearctic).

form *americana* Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 30–32, figs. 16*a*–16*e*.

hesperia Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 38–41, figs. 21*a*–21*d*, pl. 2, fig. 13.

marshallae Lundblad, 1934, op. cit., pp. 34–35, 18*a*–18*f*. [Marshall Collection]

canadensis Marshall, 1929, (male only), Univ. Toronto Stud., Biol. Ser., no. 33, pp. 63–64, pl. 3, figs. 20, 23. [Marshall Collection]

stipata Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 35–38, figs. 19*a*–19*g*, figs. 20*a*–20*c*, pl. 2, figs. 9–11.

Family **LIMNOCHARIDAE** Kramer

Limnocharidae Kramer, 1877, Arch. Naturg., **43**, (Bd. 1), pp. 242–244.

Genus **Limnochares** Latreille

Generotype: *Acarus aquaticus* Linnaeus.

Limnochares Latreille, 1796, Précis des caractères des insectes, p. 181.

Subgenus **Limnochares** *s. str.*

aquatica Linnaeus, 1758, Syst. nat., p. 617.

Subgenus **Cyclothrix** Wolcott

Generotype: *Limnochares crinita* Koenike, 1899, Abh. Senckenb. naturf. Ges., **21**: 313–318, pl. 21, figs. 23–29.

Cyclothrix Wolcott, 1905, Trans. Amer. Micros. Soc., **26**: 185.

americana Lundblad, 1941, Zool. Anz., **133**: 155.

natans Lavers, 1941, Univ. Wash. Pub., Biology, **12**: 3–6, pl. 1, figs. 1–3.

?acadiensis Habeeb, 1950, Natural. Canad., **77**: 114, 116, figs. 1–3. [C.N.H.M. Collection]

Family **EYLAIDAE** Leach

Eylaides Leach, 1815, Trans. Linn. Soc. London, **11**: 399.

Genus **Eylais** Latreille

Generotype: *Hydrachna extendens* Müller, 1776, Zool. Danicae Prodromus, p. 190.

Eylais Latreille, 1796, Précis des caractères des insectes, pp. 182–183.

abitibiensis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 60–62, pl. 1, figs. 1–4. [Marshall Collection]

extendens Müller, 1776, Zool. Danicae Prodromus, p. 190.

bakeri Marshall, 1946, Trans. Wis. Acad. Sci., **36**: 357, pl. 4, figs. 37–38. [Marshall Collection]

desecta Koenike, 1897, Abh. naturw. Ver. Bremen, **14**: 288–289.

falcata Koenike, 1897, op. cit., p. 288.

gibberipons Viets, 1910, op. cit., **20**: 171–173, figs. 5–6.

hirsutipalpis Marshall, 1946, Trans. Wis. Acad. Sci., **36**: 357–358, pl. 4, figs. 42–43. [Marshall Collection]

infundibulifera Koenike, 1897, Abh. naturw. Ver. Bremen, **14**: 284–285.

marshallae Koenike, 1912, Trans. Royal Canad. Inst., **9**: 286–288, pl. 1, figs. 8–11, pl. 2, fig. 10.

rimosa Piersig, 1899, Zool. Anz., **22**: 65–66, fig. 6.

triangulifera Koenike, 1897, Abh. naturw. Ver. Bremen, **14**: 289–290.

infundibulata Lundblad, 1941, Zool. Anz., **133**: 155.

robusta Marshall, 1946, Trans. Wis. Acad. Sci., **36**: 358, pl. 4, figs. 44–46. [Marshall Collection]

Family **PROTZIIDAE** Viets

Protziidae Viets, 1926, Zool. Anz., **69**: 196.

Genus **Calonyx** Walter

Generotype: *Partnunia lauta* Walter, 1906, Zool. Anz., **30**: 571–572.

Calonyx Walter, 1907, op. cit., **31**: 298.

Protzia Marshall, 1931, Trans. Wis. Acad. Sci., **26**: 312–313.

Sporadoporus Wolcott, 1905, Trans. Amer. Micros. Soc., **26**: 191.

constans Marshall, 1943, op. cit., **62**: 323, pl. 4, figs. 30–34. [Marshall Collection]

ovata Marshall, 1931, Trans. Wis. Acad. Sci., **26**: 312–313, pl. 7, figs. 9–12. [Marshall Collection]

Genus **Partnuniella** Viets

Generotype: *Partnuniella thermalis* Viets.

Partnuniella Viets, 1938, Verhandl. Int. Verein. Limnol., **8**, (Tome 3), p. 214.

thermalis Viets, 1938, op. cit., pp. 215–219, figs. 1–5. [Marshall Collection]

var. *paucipora* Viets, 1938, op. cit., p. 219, figs. 6–7. [Marshall Collection]

Family **CLATHROSPERCHONIDAE** Lundblad

Clathrosperchonidae Lundblad, 1936, Zool. Anz., **115**: 30.

Genus **Clathrosperchon** Lundblad

Generotype: *Clathrosperchon crassipalpis* Lundblad, 1936, op. cit., p. 30.

Clathrosperchon Lundblad, 1936, op. cit., p. 30.

americanus Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 1, figs. 1–5.

Family **HYDRYPHANTIDAE** Thor

Hydryphantidae Thor, 1900, Nyt. mag. naturvid., **38**: 263.

Genus **Hydryphantes** Koch

Generotype: *Acarus ruber* Geer.

Hydryphantes Koch, 1842, Übers. Arachnidensystems, **3**: 30.

multiporus Marshall, 1930, Trans. Wis. Acad. Sci., **25**: 247–248, pl. 5, figs. 1–3. [Marshall Collection]

ruber Geer, 1776, Mem. hist. ins., **7**: 141–146, pl. 9, figs. 3–9.

novatus Viets, 1949, Abh. naturw. Ver. Bremen, **32**: 311.

novus Viets, 1939, Arch. Hydrobiol., **36**: 75.

var. *mozleyi* Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 68–69, pl. 2, figs. 12–13. [Marshall Collection]

tenuabilis Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 33, pl. 2, fig. 9, pl. 3, figs. 16–18. [Marshall Collection]

Genus **Thyas** Koch

Generotype: *Thyas venusta* Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 5, no. 18.

Thyas Koch, 1836, op. cit.

stolli Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 194–196, pl. 2, figs. 29–32. [Marshall Collection]

Genus **Marshallothyas** Cook

Generotype: *Marshallothyas asopos* Cook, 1953, Proc. Ent. Soc. Wash., **55**: 306, figs. 1–10.

Marshallothyas Cook, 1953, op. cit., p. 305.

asopos Cook, 1953, op. cit., p. 306, figs. 1–10. [C.N.H.M. Collection]

Genus **Panisus** Koenike

Generotype: *Panisus michaeli* Koenike, 1896, Zool. Anz., **19**: 356–357.

Panisus Koenike, 1896, op. cit., p. 356.

cataphracta Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 196–198, pl. 2, figs. 33–35.

Genus **Lundbladia** Viets

Generotype: *Lundbladia feuerborni* Viets, 1929, Zool. Anz., **86**: 50–52.

Lundbladia Viets, 1929, op. cit., pp. 49–50.

muscicola Mitchell, 1953, Amer. Midl. Nat., **49**: 162–165, 15 figs. [C.N.H.M. Collection]

Genus **Panisopsis** Viets

Generotype: *Thyas vigilans* Piersig, 1896, Zool. Anz., **19**: 441.

Panisopsis Viets, 1926, op. cit., **66**: 147.

pedunculata Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 192–194, pl. 1, figs. 24–28. [Marshall Collection]

Family **THERMACARIDAE** Sokolow

Thermacaridae Sokolow, 1927, Zool. Anz., **73**: 20.

Genus **Thermacarus** Sokolow

Generotype: *Thermacarus thermobius* Sokolow, op. cit., pp. 11–20, figs. 1–13.

Thermacarus Sokolow, 1927, op. cit., pp. 11–20.

nevadensis Marshall, 1928, Psyche, **35**: 93–95, pl. 3, figs. 1–9. [Marshall Collection]

Family **HYDRODROMIDAE** Viets

Hydrodromidae Viets, 1936, Tierwelt Deutschlands, Teil 31–32, pp. 139–140.

Diplodontidae Lundblad, 1927, Zool. bidrag Uppsala, **11**: 408.

Genus **Hydrodroma** Koch

Generotype: *Hydrachna despiciens* Müller.

Hydrodroma Koch, 1842, Übers. Arachnidensystems, **3**: 32.

Diplodontus auct. (nec Dugés).

americanus Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 33, pl. 1, fig. 4, pl. 2, fig. 8, pl. 3, figs. 13–15. [Marshall Collection]

despiciens Müller, 1776, Zool. Danicae Prodromus, p. 190.

Family **PSEUDOHYDRYPHANTIDAE** Viets

Pseudohydryphantidae Viets, 1926, Zool. Anz., **69**: 196.

Genus **Pseudohydryphantes** Viets

Generotype: *Pseudohydryphantes parvulus* Viets, 1907, Abh. naturw. Ver. Bremen, **19**: 142–145, figs. 1–4.

Pseudohydryphantes Viets, 1907, op. cit., p. 142.

latipalpus Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 245–246, pl. 14, figs. 44–45. [Marshall Collection]

orbicularis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 67–68, pl. 4, figs. 36–38. [Marshall Collection]

Family **TEUTONIIDAE** Lundblad

Teutoniidae Lundblad, 1927, Zool. bidrag Uppsala, **11**: 409–410.

Genus **Teutonia** Koenike

Generotype: *Hygrobates cometes* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 10, no. 23.

Teutonia Koenike, 1889, Zool. Anz., **12**: 104.

lunata Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 245, pl. 14, figs. 48–50. [Marshall Collection]

Family **SPERCHONIDAE** Thor

Sperchonidae Thor, 1900, Nyt. mag. naturvid., **38**: 264.

Genus **Sperchonopsis** Piersig

Generotype: *Sperchon verrucosus* Protz.

Sperchonopsis Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, **22–23**: 52.

Pseudosperchon Marshall, 1933, Trans. Amer. Micros. Soc., **52**: 37.

ovalis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 66–67, pl. 4, figs. 31–33. [Marshall Collection]

verrucosa Protz, 1896, Zool. Anz., **19**: 23–25, figs. 1–3.

Genus **Sperchon**[1] Kramer

Generotype: *Sperchon squamosus* Kramer, 1879, Arch. Naturg., **45**, (Bd. 1), pp. 2–5, pl. 1, figs. 1*a*–1*d*.

Sperchon Kramer, 1877, op. cit., **43**, (Bd. 1), p. 240.

crassipalpis Marshall, 1933, Trans. Amer. Micros. Soc., **52**: 37, pl. 7, figs. 1–3. [Marshall Collection]

glandulosus Koenike, 1886, Zeit. Wissen. zool., **43**: 279–284, pl. 9, figs. 17–24.

jasperensis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 65–66, pl. 2, figs. 14–15. [Marshall Collection]

parmatus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 202–204, pl. 2, figs. 40–41.

tenuipalpis Koenike, 1895, op. cit., pp. 204–206, pl. 2, figs. 42–47.

Family **LEBERTIIDAE** Thor

Lebertiidae Thor, 1900, Nyt. mag. naturvid., **38**: 264.

Genus **Lebertia** Neuman

Generotype: *Lebertia insignis* Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), **17**, (3), pp. 69–70, pl. 8, fig. 4.

Lebertia Neuman, 1880, op. cit., pp. 68–69.

artaacetabula Marshall, 1912, Trans. Amer. Micros. Soc., **31**: 227, pl. 27, figs. 1–3. [Marshall Collection]

distincta Marshall, 1914, Trans. Wis. Acad. Sci., **17**: 1301, pl. 93, figs. 21–23. [Marshall Collection]

martisensis Marshall, 1943, Trans. Amer. Micros. Soc., **62**: 408–410, pl. 3, figs. 23–25. [Marshall Collection]

needhami Marshall, 1943, op. cit., p. 408, pl. 3, figs. 28–30. [Marshall Collection]

ontarioensis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 70–71, pl. 5, figs. 46–47. [Marshall Collection]

[1] Four new forms of *Sperchon*, *S. brevirostris* ssp. *scabriosus*, *S. mitchelli*, *S. glandulosus canadensis*, and *S. plumifer acadiensis*, are proposed by Habeeb (Leafl. Acad. Biol., no. 1, p. 8). Each form is described in less than fifty words and unillustrated. These descriptions do not satisfy the requirements of Article 25c of the International Code of Zoological Nomenclature.

parmata Marshall, 1912, Trans. Amer. Micros. Soc., **31**: 226–227, pl. 27, figs. 4–5, pl. 28, figs. 6–7. [Marshall Collection]

porosa Thor, 1900, Nyt. mag. naturvid., **38**: 273.

quinquemaculosa Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 315, 317, figs. 5–8. [Marshall Collection]

setosa Koenike, 1912, Trans. Roy. Canad. Inst., **9**: 294–295, pl. 2, fig. 20.

tau-insignita Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 201–202 (in part).

tyrrelli Koenike, 1912, Trans. Roy. Canad. Inst., **9**: 290–293, pl. 1, fig. 16, pl. 2, figs. 13–15.

tau-insignita Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 201–202 (in part).

wolcotti Koenike, 1912, Trans. Roy. Canad. Inst., **9**: 292–294, pl. 1, figs. 17–18, pl. 2, fig. 19.

tau-insignita Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 201–202 (in part).

wyomingensis Marshall, 1933, Trans. Amer. Micros. Soc., **52**: 39–40, pl. 8, figs. 16–17. [Marshall Collection]

Genus **Oxus** Kramer

Generotype: *Oxus oblongus* Kramer, 1879, Arch. Naturg., **45**, (Bd. 1), pp. 5–7, pl. 1, figs. 2*a*–2*c*.

Oxus Kramer, 1877, op. cit., **43**, (Bd. 1), pp. 240–241.

connatus Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 71–72, pl. 4, fig. 35. [Marshall Collection]

elongatus Marshall, 1929, op. cit., p. 72, pl. 4, fig. 34.

intermedius Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 31, pl. 1, figs. 1–3. [Marshall Collection]

Genus **Frontipoda** Koenike

Generotype: *Hydrachna musculus* Müller, 1776, Zool. Danicae Prodromus, p. 191.

Frontipoda Koenike, 1891, Zool. Anz., **14**: 19.

americana Marshall, 1914, Trans. Wis. Acad. Sci., **17**: 1300–1301, pl. 92, figs. 1–8. [Marshall Collection]

Genus **Gnaphiscus** Koenike

Generotype: *Gnaphiscus setosus* Koenike, 1898, Zool. Anz., **21**: 262–263.

Gnaphiscus Koenike, 1898, loc. cit.

occidentalis Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 247, pl. 13, figs. 36–40, pl. 14, figs. 51–55. [Marshall Collection]

Family **TORRENTICOLIDAE** Oudemans

Torrenticolidae Oudemans, 1941, Zool. Anz., **136**: 178.

Atractidaeidae Thor, 1902, op. cit., **25**: 408.

Genus **Torrenticola** Piersig

Generotype: *Atractides anomalus* Koch, 1837, Deutschl. Crust., Myr., Arach., Heft 11, no. 10.

Torrenticola Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, **22–23**: 155.

Atractides auct. (nec Koch).

californicus Marshall, 1943, Trans. Amer. Micros. Soc., **62**: 315–316, pl. 2, figs. 14–16. [Marshall Collection]

compactus Marshall, 1943, op. cit., p. 315, pl. 3, figs. 25–26, pl. 4, fig. 27. [Marshall Collection]

ellipsoidalis Marshall, 1943, op. cit., pp. 308–310, pl. 2, figs. 11–13. [Marshall Collection]

geographicus Marshall, 1943, op. cit., p. 314, pl. 3, figs. 21–24. [Marshall Collection]

indistinctus Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 317, 319, figs. 16–18. [Marshall Collection]

jordanensis Marshall, 1930, Trans. Wis. Acad. Sci., **25**: 248–249, pl. 6, figs. 12–14. [Marshall Collection]

mercedensis Marshall, 1943, Trans. Amer. Micros. Soc., **62**: 310, 312, pl. 2, figs. 9–10. [Marshall Collection]

oblongatus Marshall, 1943, op. cit., p. 316, pl. 4, figs. 28–29, pl. 5, fig. 40. [Marshall Collection]

obovatus Marshall, 1943, op. cit., pp. 316, 318, pl. 5, figs. 35–39. [Marshall Collection]

occidentalis Marshall, 1933, op. cit., **52**: 40, pl. 7, figs. 5–7. [Marshall Collection]

sierrensis Marshall, 1943, op. cit., **62**: 307, pl. 1, figs. 1–4. [Marshall Collection]

simulans Marshall, 1933, op. cit., **52**: 40, pl. 7, figs. 8–10. [Marshall Collection]

tahoei Marshall, 1943, op. cit., **62**: 308, pl. 1, figs. 5–7. [Marshall Collection]

waddellicus Marshall, 1943, op. cit., pp. 312, 314, pl. 3, figs. 17–20. [Marshall Collection]

Genus **Testudacarus** Walter

Generotype: *Testudacarus tripeltatus* Walter, 1928, Rec. Indian Mus., **30**: pp. 75–78, figs. 8–10.

Testudacarus Walter, 1928, op. cit., p. 75.

americanus Marshall, 1943, Trans. Amer. Micros. Soc., **62**: 320, pl. 6, figs. 46–48. [Marshall Collection]

minimus Marshall, 1943, op. cit., p. 322, pl. 6, figs. 43–45. [Marshall Collection]

Family **LIMNESIIDAE** Thor

Limnesiidae Thor, 1900, Nyt. mag. naturvid., **38**: 265.

Genus **Limnesia** Koch

Generotype: *Limnesia fulgida* Koch.

Limnesia Koch, 1842, Übers. Arachnidensystems, **3**: 27.

Limnesiopsis Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, **22–23**: 52.

anomala Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 207–208, pl. 2, figs. 49–53.

subsp. *marshallae* Viets, 1938, Zool. Anz., **121**: 134–135.

anomala Marshall, 1932, (male only), Trans. Wis. Acad. Sci., **27**: 346, pl. 7, fig. 7.

coerulea Lundblad, 1941, Zool. Anz., **133**: 158.

columbica Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 239–240, pl. 11, figs. 9–12. [Marshall Collection]

cornuta Wolcott, 1903, op. cit., **24**: 89–92, pl. 12, figs. 1–5. [Marshall Collection]

fulgida Koch, 1835, Deutschl. Crust., Myr., Arachn., Heft 2, no. 19.

histrionica Wolcott, 1903, Trans. Amer. Micros. Soc., **24**: 92–95, pl. 12, figs. 6–7.

wolcotti Piersig, 1905, Zool. Centr., **12**: 198.

koenikea Piersig, 1894, Zool. Anz., **17**: 151.

maculata Müller, 1776, Zool. Danicae Prodromus, p. 191.

americana Piersig, 1905, Zool. Centr., **12**: 198.

elliptica Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 240, pl. 11, figs. 13–14. [Marshall Collection]

marshallae Viets, 1938, Zool. Anz., **121**: 134–135.

anomala Marshall, 1927, Trans. Amer. Micros. Soc., **46**: 213, pl. 7, figs. 5–6.

anomala Marshall, 1932, Trans. Wis. Acad. Sci., **27**: 346, pl. 7, figs. 6–8.

hutchinsoni Lundblad, 1941, Zool. Anz., **133**: 158.

marshalliana Lundblad, 1952, Ark. Zool., (2), **3**: 525.

marshallae Lundblad, 1941, Zool. Anz., **133**: 157.

paucispina Wolcott, 1903, Trans. Amer. Micros. Soc., **24**: 98–100, pl. 13, figs. 10–11. [Marshall Collection]

protractipora Lundblad, 1941, Zool. Anz., **133**: 157.

undulata Müller, 1781, Hydrachnae aquis Danicae, p. 80, pl. 11, fig. 1.

var. *californica* Lundblad, 1941, Zool. Anz., **133**: 158.

wawaseea Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 315, figs. 9–11. [Marshall Collection]

Genus **Tyrrellia** Koenike

Generotype: *Tyrrellia circularis* Koenike.

Tyrrellia Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 198–199.

circularis Koenike, 1895, op. cit., pp. 199–201, pl. 2, figs. 36–38.

var. *monensis* Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 386, pl. 1, figs. 5–7, pl. 2, fig. 15. [Marshall Collection]

ovalis Marshall, 1932, op. cit., **27**: 342–343, pl. 8, figs. 18–21. [Marshall Collection]

Family **PONTARACHNIDAE** Thor

Pontarachnidae Thor, 1929, Nyt. mag. naturvid., **67**, pl. 7.

Genus **Pontarachna** Philippi

Generotype: *Pontarachna punctulum* Philippi, 1840, Arch. Naturg., **6**, (Bd. 1), pp. 191–193, pl. 4, figs. 4–5.

Pontarachna Philippi, 1840, op. cit., p. 193.

cruciata Hall, 1912, Pomona Coll., Rep. Laguna Mar. Lab., **1**: 183–184, fig. 102.

Family **HYGROBATIDAE** Koch

Hygrobatides Koch, 1842, Übers. Arachnidensystems, **3**: 7.

Genus **Hygrobates** Koch

Generotype: *Hygrobates lutescens* Koch, 1841, Deutschl. Crust., Myr., Arachn., Heft 37, no. 13.

Hygrobates Koch, 1837, op. cit., Heft 10, no. 8.

decaporus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 215–216, pl. 3, figs. 62–63.

exilis Koenike, 1895, op. cit., pp. 213–215, pl. 3, figs. 60–61.

longipalpis Hermann, 1804, Mém. Aptérolog., p. 55, pl. 3, fig. 1, pl. 9, fig. P.

ruber Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 32, pl. 1, figs. 5–7.

multiporus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 216–217, pl. 3, fig. 64. [Marshall Collection]

neooctoporus Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 34. [Marshall Collection]

octoporus Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 238–239, pl. 11, figs. 1–5.

occidentalis Marshall, 1943, op. cit., **62**: 414, pl. 4, figs. 39–41. [Marshall Collection]

Genus **Atractides** Koch

Generotype: *Atractides spinipes* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 16.

Atractides Koch, 1837, loc. cit.

Megapus Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), **17**, (3), pp. 63–64.

crassipalpis Koenike, 1909, Abh. naturw. Ver. Bremen, **19**: 246.

ovalis Koenike, 1895, op. cit., **13**: 211–212, pl. 3, figs. 58–59.

nodipalpis Thor, 1899, Arch. Math. Naturv., **21**, (5), pp. 39–40, pl. 17, figs. 120–121 (Palearctic).

var. *americanus* Marshall, 1943, Trans. Amer. Micros. Soc., **62**: 414–415, pl. 4, figs. 31–34. [Marshall Collection]

spinipes Marshall, 1933, op. cit., **52**: 41, pl. 7, figs. 18–20.

parviscutus Marshall, 1915, Trans. Amer. Micros. Soc., **34**: 186, pl. 6, figs. 1–4. [Marshall Collection]

orthopes Marshall, 1915, op. cit., p. 187, pl. 6, figs. 10–12.

?phenopleces Marshall, 1915, op. cit., pp. 186–187, pl. 6, figs. 5–9. [Marshall Collection]

sturgeonsis Marshall, 1927, op. cit., **46**: 274–275, pl. 8, figs. 16–19. [Marshall Collection]

Family **UNIONICOLIDAE** Oudemans

Unionicolidae Oudemans, 1909, Tijdschr. Ent., **52**: 60.

Genus **Unionicola** Haldeman

Generotype: *Unionicola crassipes* Müller.

Unionicola Haldeman, 1842, Zool. Contr., **1**: 1.

Atax Koch, 1842, Übers. Arachnidensystems, **3**: 7.

abnormipes Wolcott, 1898, Zool. Bull., **1**: 280–281, fig. 2. [Marshall Collection]

aculeatus Koenike, 1890, Zool. Anz., **13**: 139–140.

sayi Piersig, 1901, Das Tierreich, **13**: 213.

adensameri Thon, 1901, Ann. Naturhist. Hofmus., **16**: 31–35, pl. 3.

arcuata Wolcott, 1898, Zool. Bull., **1**: 284–285, fig. 5. [Marshall Collection]

campelomaicola Marshall, 1935, Univ. Toronto Stud., Biol. Ser., no. 39, pp. 99–102, figs. 1–5. [Marshall Collection]

crassipes Müller, 1776, Zool. Danicae Prodromus, p. 189.

figuralis Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 7, no. 10.

fossulatus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 221–222, pl. 3, figs. 68–71.

indistinctus Wolcott, 1898, Zool. Bull., **1**: 281–282, fig. 3. [Marshall Collection]

intermedia Koenike, 1882, Abh. naturw. Ver. Bremen, **7**: 265–266 (Palearctic).

var. *wolcotti* Piersig, 1900, Zool. Anz., **23**: 211–212. [Marshall Collection]

pectinatus Wolcott, 1898, Zool. Bull., **1**: 280, fig. 1. [Marshall Collection]

serratus Wolcott, 1898, op. cit., pp. 282–283, fig. 4. [Marshall Collection]

stricta Wolcott, 1898, op. cit., pp. 283–284. [Marshall Collection]

tumidus Wolcott, 1898, op. cit., p. 285, fig. 6. [Marshall Collection]

ypsilophora Bonz, 1783, K. Deutsche Akad. Naturf. Halle, nova acta Leopoldana, **7**: 52, pl. 1, figs. 1–4.

haldemani Piersig, 1900, Zool. Anz., **23**: 212.

formosa Dana and Whelpley, 1836, Amer. Jour. Sci., (1), **30**: 357–358, figs. 1–8.

Genus **Najadicola** Piersig

Generotype: *Unionicola ingens* Koenike.

Najadicola Piersig, 1897, Zool. Anz., **20**: 59–60.

ingens Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 219–220, pl. 3, figs. 65–67.

Genus **Neumania** Lebert

Generotype: *Hydrachna spinipes* Müller, 1776, Zool. Danicae Prodromus, p. 189.

Neumania Lebert, 1879, Bull. Soc. Vaud. Sci. Natur., **16**: 357.

armata Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 209, pl. 3, figs. 11–13. [Marshall Collection]

muttkowskii Marshall, 1922, op. cit., p. 208, pl. 2, fig. 10 (in part). [Marshall Collection]

distincta Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 210–211, pl. 4, figs. 20, 23. [Marshall Collection]

brevibrachiata Marshall, 1922, op. cit., p. 211, pl. 4, figs. 24–25. [Marshall Collection]

okobojica Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 31, pl. 2, figs. 11–12. [Marshall Collection]

extendens Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 209, pl. 3, figs. 14–16. [Marshall Collection]

punctata Marshall, 1922, (female only), op. cit., pp. 211–212, pl. 4, fig. 29. [Marshall Collection]

fragilis Marshall, 1922, op. cit., p. 208, pl. 2, figs. 7–9. [Marshall Collection]

hickmani Marshall, 1933, op. cit., **28**: 46, pl. 4, figs. 41–43. [Marshall Collection]

kodiakica Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 246, pl. 14, figs. 42–43. [Marshall Collection]

longiseta Marshall, 1924, op. cit., p. 243, pl. 12, fig. 23, pl. 13, fig. 26. [Marshall Collection]

ovata Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 206–207, pl. 2, fig. 1.

papillator Marshall, 1922, op. cit., pp. 209–210, pl. 3, figs. 17–20, pl. 4, fig. 21. [Marshall Collection]

pubescens Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 319, figs. 1–4. [Marshall Collection]

punctata Marshall, 1922, (male only), Trans. Wis. Acad. Sci., **20**: 211–212. [Marshall Collection]

semicircularis Marshall, 1922, op. cit., p. 207, pl. 2, figs. 2–3. [Marshall Collection]

tenuipalpis Marshall, 1922, op. cit., pp. 207–208, pl. 2, figs. 4–6. [Marshall Collection]

muttkowskii Marshall, 1922, op. cit., p. 208, pl. 2, fig. 10 (in part). [Marshall Collection]

?vernalis Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 218–219.

Genus **Koenikea** Wolcott

Generotype: *Koenikea concava* Wolcott (male only).

Koenikea Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 189–190.

Tanaognathus Wolcott, 1900, op. cit., pp. 193–194.

alata Lundblad, 1943, K. Svenska Vetenskap. Handl., **20**, (5), p. 15, fig. 7.

concava Wolcott, 1900, (male only), Trans. Amer. Micros. Soc., **21**: 190–193, pl. 11, figs. 15, 17, 19, pl. 12, fig. 24. [Marshall Collection]

haldemani Viets, 1930, Zool. Anz., **92**: 268–272, figs. 6–8.

marshallae Viets, 1930, op. cit., pp. 267–271, figs. 1–5.

spinipes Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 194–197, pl. 12, figs. 25–28. [Marshall Collection]

wolcotti Viets, 1930, Zool. Anz., **92**: 266. [Marshall Collection]

concava Wolcott, 1900, (female only), Trans. Amer. Micros. Soc., **21**: 190–193, pl. 11, figs. 18, 20–21, pl. 12, fig. 23. [Marshall Collection]

Genus **Huitfeldtia** Thor

Generotype: *Huitfeldtia rectipes* Thor.

Huitfeldtia Thor, 1898, Arch. Math. Naturv., **20**, (7), pp. 1–2.

rectipes Thor, 1898, op. cit., pp. 4–5, pl. 5, figs. 1–7.

Family **FELTRIIDAE** Thor

Feltriidae Thor, 1929, Nyt. mag. naturvid., 67, pl. 7.

Genus **Feltria** Koenike

Generotype: *Feltria minuta* Koenike.

Feltria Koenike, 1892, Zool. Anz., **15**: 323.

minuta Koenike, 1892, op. cit., pp. 323–324, figs. 3–4.

Family **PIONIDAE** Thor

Pionidae Thor, 1900, Nyt. mag. naturvid., **38**: 265.

Genus **Wettina** Piersig

Generotype: *Tiphys podagricus* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 9.

Wettina Piersig, 1892, Zool. Anz., **15**: 408–410.

primaria Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 83, pl. 4, figs. 39–41. [Marshall Collection]

Genus **Hydrochoreutes** Koch

Generotype: *Spio ungulata* Koch.

Hydrochoreutes Koch, 1837, Deutschl. Crust., Myr., Arach., Heft 11, no. 11.

ungulatus Koch, 1835, op. cit., Heft 5, no. 17.

Genus **Tiphys** Koch

Generotype: *Tiphys sagulatus* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 7.

Tiphys Koch, 1835, op. cit., Heft 5, no. 19.

Acercus Koch, 1842, Übers. Arachnidensystems, **3**: 23.

Laminipes Piersig, 1901, Zool. Anz., **24**: 219–220.

diversus Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 83–84, pl. 5, figs. 48–50. [Marshall Collection]

simulans Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 244, pl. 14, figs. 46–47. [Marshall Collection]

torris Müller, 1776, Zool. Danicae Prodromus, p. 191.

var. *americanus* Marshall, 1937, Trans. Wis. Acad. Sci., **30**: 237, pl. 8, figs. 58–61.

Genus **Pionopsis** Piersig

Generotype: *Hydrachne lutescens* Hermann, 1804, Mém. Aptérolog., p. 57, pl. 6, fig. 7.

Pionopsis Piersig, 1894, Zool. Anz., **17**: 215–216.

latilamellis Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 244, pl. 13, figs. 32–34. [Marshall Collection]

Genus **Pionacercus** Piersig

Generotype: *Pionacercus leuckarti* Piersig, 1894, Zool. Anz., **17**: 213–214, figs. 1–2.

Pionacercus Piersig, 1894, op. cit., p. 213.

novus Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 244–245, pl. 13, fig. 35, pl. 14, fig. 41. [Marshall Collection]

Genus **Piona** Koch

Generotype: *Nesaea rosea* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 10, no. 7.

Piona Koch, 1842, Übers. Arachnidensystems, **3**: 13.

Curvipes Koenike, 1891, Zool. Anz., **14**: 19–20.

americana Marshall, 1929, Trans. Wis. Acad. Sci., **24**: 401–404, pl. 9, figs. 1–9. [Marshall Collection]

carnea Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 8, no. 24.

neocarnea Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 241, pl. 12, figs. 15–17. [Marshall Collection]

conglobata Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 8, no. 9 (Palearctic).

var. *wisconsinensis* Marshall, 1935, Trans. Wis. Acad. Sci., **29**: 284, pl. 10, figs. 43–47. [Marshall Collection]

constrictus Wolcott, 1902, Trans. Amer. Micros. Soc., **23**: 222–226, pl. 30, figs. 14–18. [Marshall Collection]

coronis Wolcott, 1902, op. cit., pp. 208–210, pl. 29, figs. 1–2. [Marshall Collection]

crassus Wolcott, 1902, op. cit., pp. 246–249, pl. 33, figs. 57–60. [Marshall Collection]

debilis Wolcott, 1902, op. cit., pp. 234–235, pl. 32, figs. 44–46. [Marshall Collection]

exilis Wolcott, 1902, op. cit., pp. 210–213, pl. 29, figs. 3–8. [Marshall Collection]

guatemalensis Stoll, 1887, Biol. Centr.-Amer., **13**: 11–12, pl. 10, figs. 2–2*b*, pl. 11, figs. 1–1*f*.

inconstans Wolcott, 1902, Trans. Amer. Micros. Soc., **23**: 241–243, pl. 32, fig. 47, pl. 33, figs. 48–50. [Marshall Collection]

insularis Marshall, 1924, op. cit., **43**: 243, pl. 12, fig. 24, pl. 13, figs. 30, 31. [Marshall Collection]

interrupta Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 81–82, pl. 6, figs. 59–60. [Marshall Collection]

linguaplax Crowell, 1953, Amer. Midl. Nat., **50**: 426–431, figs. 1–12. [C.N.H.M. Collection]

medius Wolcott, 1902, Trans. Amer. Micros. Soc., **23**: 229–231, pl. 31, figs. 30–31. [Marshall Collection]

nodata Müller, 1776, Zool. Danicae Prodromus, p. 191 (Palearctic).

var. *latigenitalia* Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 242, pl. 12, fig. 22, pl. 13, figs. 27–29. [Marshall Collection]

?fuscatus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 209.

obturbans Piersig, 1896, Zool. Anz., **19**: 439–440.

pugilis Wolcott, 1902, Trans. Amer. Micros. Soc., **23**: 213–216, pl. 29, figs. 9–12. [Marshall Collection]

reighardi Wolcott, 1902, op. cit., pp. 235–239, pl. 32, figs. 35–38. [Marshall Collection]

rotunda Kramer, 1879, Arch. Naturg., **45**, (Bd. 1), p. 12, pl. 1, fig. 6.

rubrapes Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 241–242, pl. 12, figs. 18–21. [Marshall Collection]

setiger Wolcott, 1902, op. cit., **23**: 243–246, pl. 33, figs. 51–56. [Marshall Collection]

socialis Marshall, 1930, op. cit., **49**: 343–344, pl. 39, figs. 5–10. [Marshall Collection]

spinulosus Wolcott, 1902, op. cit., pp. 226–229, pl. 31, figs. 24–29. [Marshall Collection]

triangularis Wolcott, 1902, op. cit., **23**: 220–222, pl. 31, figs. 32–33. [Marshall Collection]

turgidus Wolcott, 1902, op. cit., pp. 216–220, pl. 30, figs. 19–23. [Marshall Collection]

wolcotti Marshall, 1937, Trans. Wis. Acad. Sci., **30**: 235–236, pl. 7, figs. 49–52. [Marshall Collection]

Genus **Forelia** Haller

Generotype: *Arrhenurus variegator* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 12, no. 24.

Forelia Haller, 1882, Mitt. naturf. Ges. Bern, **1881**, Heft 2, pp. 58–59.

Tiphys Wolcott, 1905, Trans. Amer. Micros. Soc., **26**: 214–215.

liliacea Müller, 1776, Zool. Danicae Prodromus, p. 190.

ovalis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 78–79, pl. 5, figs. 42–45. [Marshall Collection]

Family **AXONOPSIDAE** Viets

Axonopsidae Viets, 1929, Zool. Anz., **80**: 169.

Genus **Albia** Thon

Generotype: *Albia stationis* Thon.

Albia Thon, 1899, Zool. Anz., **22**: 100–101.

caerulea Marshall, 1927, Trans. Amer. Micros. Soc., **46**: 277, pl. 9, figs. 25–27. [Marshall Collection]

?stationis Thon, 1899, Zool. Anz., **22**: 101–102.

Genus **Brachypoda** Lebert

Generotype: *Hydrachna versicolor* Müller, 1776, Zool. Danicae Prodromus, p. 191.

Brachypoda Lebert, 1879, Bull. Soc. Vaud. Sci. Natur., (2), **16**: 340, 374.

Brachypoda Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 9 (in part).

setosicauda Habeeb, 1953, op. cit., p. 12, figs. 26–27.

ssp. *acuticauda* Habeeb, 1953, op. cit., p. 12, fig. 28.

Genus **Axonopsis** Piersig

Generotype: *Hydrachna complanata* Müller, 1776, Zool. Danicae Prodromus, p. 191.

Axonopsis Piersig, 1893, Zool. Anz., **16**: 310.

setoniensis Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 9, figs. 23–25.

Genus **Ljania** Thor

Generotype: *Ljania bipapillata* Thor.

Ljania Thor, 1898, Arch. f. Math. Naturv., **20**, (13), p. 3.

bipapillata Thor, 1898, op. cit., p. 3 (Palearctic).

ssp. *purpurea* Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 9.

Genus **Neoaxonopsis** Lundblad

Generotype: *Neoaxonopsis odontogaster* Lundblad, 1938, Zool. Anz., **122**: 38–39.

Neoaxonopsis Lundblad, 1938, op. cit., p. 38.

Brachypoda Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 9 (in part).

pilositarsa Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 9, figs. 20–23.

unguitarsa Habeeb, 1953, op. cit., pp. 9, 12, figs. 29–30.

Genus **Aturus** Kramer

Generotype: *Aturus scaber* Kramer, 1875, Arch. Naturg., **43**, (Bd. 1), pp. 309–310, pl. 8, fig. 3.

Aturus Kramer, 1875, op. cit., p. 309.

acadiensis Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 15.

canadensis Habeeb, 1953, Natural. Canad., **80**: 274–275.

deceptor Habeeb, 1953, op. cit., pp. 275–276.

droueti Habeeb, 1953, Leafl. Acad. Biol., no. 1, p. 15.

estellae Habeeb, 1953, op. cit., p. 2, figs. 6–11.

formosus Habeeb, 1953, op. cit., p. 4, figs. 12–14, 18.

pallidus Habeeb, op. cit., p. 4.

mirabilis Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, **22–23**: 157.

scaber Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 186–191, pl. 1, fig. 23.

projector Habeeb, 1953, Natural. Canad., **80**: 275.

Family **MIDEIDAE** Viets

Mideidae Viets, 1929, Zool. Anz., **80**: 169.

Genus **Midea** Bruzelius

Generotype: *Hydrachna orbiculata* Müller, 1776, Zool. Danicae Prodromus, p. 190.

Midea Bruzelius, 1854, Biskrif. ofver Hydrachnider, p. 35.

determina Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 84–85, pl. 7, figs. 62–66. [Marshall Collection]

expansa Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 138–139, pl. 4, figs. 26–30. [Marshall Collection]

Family **MIDEOPSIDAE** Thor

Mideopsidae Thor, 1928, Zeits. Morph. Okol. Tiere, **11**: 109.

Genus **Mideopsis** Neuman

Generotype: *Hydrachna orbicularis* Müller.

Mideopsis Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), **17**, (3), p. 67.

americanus Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 140–141, pl. 1, figs. 1–4. [Marshall Collection]

fibrosa Lundblad, 1941, Zool. Anz., **133**: 159–160.

lamellipalpis Lundblad, 1941, op. cit., p. 159.

orbicularis Müller, 1776, Zool. Danicae Prodromus, p. 190.

rosea Lundblad, 1941, Zool. Anz., **133**: 159.

Genus **Xystonotus** Wolcott

Generotype: *Xystonotus asper* Wolcott.

Xystonotus Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 185–186.

asper Wolcott, 1900, op. cit., pp. 186–189, pl. 10, figs. 8–14. [Marshall Collection]

reelfootensis Hoff, 1944, Jour. Tenn. Acad. Sci., **19**: 234–238, pl. 1, figs. 1–10. [Marshall Collection]

Family **KRENDOWSKIJIDAE** Lundblad

Krendowskijidae Lundblad, 1930, Zool. bidrag Uppsala, **13**: 56–58.

Genus **Krendowskia** Piersig

Generotype: *Krendowskia latissima* Piersig, 1895, Zool. Anz., **18**: 147–148.

Krendowskia Piersig, 1895, op. cit., pp. 147–148.

similis Viets, 1931, op. cit., **93**: 42–44, figs. 12–14.

Genus **Geayia** Thor

Generotype: *Geayia venezuelae* Thor, 1897, Bull. Mus. d'Hist. Nat., **3**: 12–13, figs. 1–6.

Geayia Thor, 1897, op. cit., pp. 11–12.

Krendowskia Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 178–181.

Krendowskia Wolcott, 1905, op. cit., **26**: 193.

ovata Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 181–185, pl. 9, figs. 1–7. [Marshall Collection]

Family **ARRENURIDAE** Thor

Arrenuridae Thor, 1900, Nyt. mag. naturvid., **38**: 266.

Genus **Arrenurus** Dugés

Generotype: *Arrenurus viridis* Dugés, 1834, Ann. Sci. Nat. (Zool.), (2), **1**: 154–156, pl. 10, figs. 18–21.

Arrenurus Dugés, 1834, op. cit., pp. 154–156.

Steganaspis Wolcott, 1901, Trans. Amer. Micros. Soc., **22**: 105–106.

Subgenus **Truncaturus** Thor

Generotype: *Arrenurus paluster* Thor, 1900, Nyt. mag. naturvid., **38**: 380–382, pl. 8, figs. 25–27.

Truncaturus Thor, 1900, op. cit., pp. 379–380.

kenki Marshall, 1944, Amer. Midl. Nat., **31**: 631, 633, pl. 1, figs. 1–2, 6. [Marshall Collection]

Subgenus **Micruracarus** Viets

Generotype: *Arrhenurus forpicatus* Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), **17**, (3), p. 90, pl. 6, figs. 2.

Micruracarus Viets, 1911, Zool. Anz., **38**: 504.

acutus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 92, pl. 8, figs. 14–16. [Marshall Collection]

bicaudatus Marshall, 1908, op. cit., p. 91, pl. 7, figs. 8–10. [Marshall Collection]

couleensis Lavers, 1945, op. cit., **64**: 233–234, pl. 1, figs. 1–4. [Marshall Collection]

crenellatus Marshall, 1908, op. cit., **28**: 90–91, pl. 8, figs. 11–13. [Marshall Collection]

infundibularis Marshall, 1908, op. cit., pp. 93–94, pl. 8, fig. 20, pl. 9, figs. 21–22. [Marshall Collection]

laticaudatus Marshall, 1908, op. cit., pp. 95–96, pl. 9, figs. 23–25. [Marshall Collection]

lyriger Marshall, 1908, op. cit., pp. 94–95, pl. 9, fig. 26, pl. 10, figs. 27–28. [Marshall Collection]

montifer Marshall, 1908, op. cit., pp. 96–97, pl. 10, figs. 29–31. [Marshall Collection]

muttkowskii Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 144, pl. 4, figs. 33–35. [Marshall Collection]

pseudosetiger Marshall, 1921, Trans. Amer. Micros. Soc., **40**: 170, pl. 9, figs. 4–6. [Marshall Collection]

setiger Marshall, 1910, op. cit., **29**: 97–98.

rotundus Marshall, 1908, op. cit., **28**: 89–90, pl. 7, figs. 1–4, pl. 9, fig. 128. [Marshall Collection]

scutulatus Marshall, 1908, op. cit., p. 93, pl. 8, figs. 17–19. [Marshall Collection]

setiger Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 178–182, pl. 1, figs. 11–13.

ovalis Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 90, pl. 7, figs. 5–7. [Marshall Collection]

Subgenus **Megaluracarus** Viets

Generotype: *Hydrachna globator* Müller, 1776, Zool. Danicae Prodromus, p. 188.

Megaluracarus Viets, 1911, Zool. Anz., **38**: 504.

apetiolatus Piersig, 1904, Zool. Centr., **11**: 210.

corniger Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 155–156, pl. 15, fig. 7, *a–e*.

aphelocercus Lavers, 1945, Trans. Amer. Micros. Soc., **64**: 248, pl. 4, figs. 33–38. [Marshall Collection]

belonocercus Lavers, 1945, op. cit., pp. 238–239, pl. 1, figs. 7–12. [Marshall Collection]

birgei Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 158–159, pl. 16, fig. 10, *a–f*, pl. 17, fig. 10, *e*. [Marshall Collection]

capillatus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 101–102, pl. 12, figs. 43–45.

cardiacus Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 153–154, pl. 17, fig. 5, *d–i*, pl. 18, fig. 5, *a–c*. [Marshall Collection]

cornicularis Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 112–113, pl. 14, figs. 68–70. [Marshall Collection]

elevatus Marshall, 1914, Trans. Wis. Acad. Sci., **17**: 1301–1302, pl. 1, figs. 12–15, pl. 2, fig. 16.

elongatus Marshall, 1924, op. cit., **21**: 214, pl. 7, figs. 6–7, pl. 8, figs. 14–15. [Marshall Collection]

expansus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 107–108, pl. 13, figs. 53–55. [Marshall Collection]

invaginatus Lavers, 1945, op. cit., **64**: 246, 248, pl. 3, figs. 27–32. [Marshall Collection]

kincaidi Lavers, 1945, op. cit., pp. 242, 244, pl. 3, figs. 22–26, pl. 6, fig. 63. [Marshall Collection]

krameri Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 182–185, pl. 1, figs. 16–20.

laversi Marshall, 1944, Amer. Midl. Nat., **31**: 633, 635, pl. 2, figs. 7–11, pl. 3, fig. 17. [Marshall Collection]

longicaudatus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 111–112, pl. 14, figs. 65–67. [Marshall Collection]

mamilianus Marshall, 1908, op. cit., pp. 98–99, pl. 10, figs. 32–34, pl. 11, fig. 35. [Marshall Collection]

manubriator Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 151–152, pl. 15, fig. 3, *b*, pl. 16, fig. 3, *a*, *c*, *d*, pl. 17, fig. 3, *e*, *f*. [Marshall Collection]

marshalli Piersig, 1904, Zool. Centr., **11**: 210.

globator Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 148–150, pl. 14, fig. 1, *a–g*, pl. 15, fig. 1, *e*.

megalurus Marshall, 1903, op. cit., pp. 150–151, pl. 14, fig. 2, *b*, *c*, *e*, *f*, pl. 15, fig. 2, *a*, *d*. [Marshall Collection]

var. *intermedius* Marshall, 1940, op. cit., **32**: 147–148, pl. 5, figs. 41–44. [Marshall Collection]

morrisoni Marshall, 1904, op. cit., **14**: 523–524, pl. 40, fig. 2, *a–d*.

parallellatus Marshall, 1903, op. cit., **14**: 154–155, pl. 16, fig. 6, *a–c*, pl. 17, fig. 6, *d*, pl. 18, fig. 6, *e*. [Marshall Collection]

prominulus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 108–109, pl. 13, figs. 56–60. [Marshall Collection]

pseudocaudatus Piersig, 1905, Zool. Centr., **12**: 185.

caudatus Marshall, 1904, Trans. Wis. Acad. Sci., **14**: 521–523, pl. 40, fig. 1, *a–c*.

pseudoconicus Piersig, 1904, Zool. Centr., **11**: 210.

conicus Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 158, pl. 18, fig. 9, *a–d*.

pseudocylindratus Piersig, 1904, Zool. Centr., **11**: 210.

cylindratus Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 156–157, pl. 17, fig. 8, *a–d*.

rawsoni Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 86, pl. 7, figs. 67–70. [Marshall Collection]

rectangularis Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 110, pl. 14, figs. 61–63. [Marshall Collection]

rheophilous Lavers, 1945, op. cit., **64**: 239, pl. 2, figs. 13–17, pl. 4, fig. 43. [Marshall Collection]

scutuliformis Marshall, 1908, op. cit., **28**: 100, pl. 11, figs. 39–42. [Marshall Collection]

semicircularis Piersig, 1904, Zool. Centr., **11**: 210.

securiformis Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 152–153, pl. 18, fig. 4, *a–c*.

simulans Marshall, 1921, Trans. Amer. Micros. Soc., **40**: 169, pl. 10, figs. 17–21. [Marshall Collection]

solifer Marshall, 1908, op. cit., **28**: 99, pl. 11, figs. 36–38. [Marshall Collection]

tahoei Marshall, 1910, op. cit., **29**: 100–101, pl. 1, fig. 7, pl. 2, figs. 11–14, pl. 3, fig. 3. [Marshall Collection]

uniformis Marshall, 1921, op. cit., **40**: 169, pl. 9, figs. 1–3. [Marshall Collection]

wardi Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 148, pl. 6, figs. 52–54. [Marshall Collection]

Subgenus **Arrenurus** *s. str.*

americanus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 126–128, pl. 21, figs. 112–117. [Marshall Collection]

var. *mucronatus* Lavers, 1945, op. cit., **64**: 255–256, pl. 5, fig. 50. [Marshall Collection]

amplus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 122–123, pl. 20, figs. 102–105. [Marshall Collection]

auricularis Lavers, 1945, op. cit., **64**: 258, 260, pl. 5, figs. 51–53, pl. 6, figs. 60–62. [Marshall Collection]

auris Lavers, 1945, op. cit., pp. 260–261, pl. 6, figs. 55–58. [Marshall Collection]

bleptopetiolatus Cook, 1954, op. cit., **73**: 48, 50, pl. 1, figs. 3, 7. [C.N.H.M. Collection]

cascadensis Lavers, 1945, op. cit., **64**: 253, pl. 5, figs. 44–49. [Marshall Collection]

compactilis Marshall, 1908, op. cit., **28**: 120, pl. 18, figs. 93–95. [Marshall Collection]

dentipetiolatus Marshall, 1908, op. cit., p. 117, pl. 16, fig. 81, pl. 17, figs. 82–83. [Marshall Collection]

drepanophorus Cook, 1954, op. cit., **73**: 51–52, pl. 1, fig. 8, pl. 2, fig. 22, pl. 3, fig. 23. [C.N.H.M. Collection]

falcicornis Marshall, 1908, op. cit., **28**: 121–122, pl. 19, figs. 96–98. [Marshall Collection]

fissicorniformis Cook, 1954, op. cit., **73**: 50, pl. 1, figs. 2, 4. [C.N.H.M. Collection]

fissicornis Marshall, 1908, op. cit., **28**: 130, pl. 22, figs. 125–127. [Marshall Collection]

flabellifer Marshall, 1908, op. cit., pp. 125–126, pl. 22, figs. 122–124. [Marshall Collection]

gennadus Cook, 1954, op. cit., **73**: 54, pl. 3, figs. 27–28. [C.N.H.M. Collection]

hungerfordi Cook, 1954, op. cit., p. 52, pl. 2, figs. 14–16. [C.N.H.M. Collection]

interpositus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 176–178, pl. 1, figs. 6–10.

angustocaudatus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 116, pl. 16, figs. 77–79. [Marshall Collection]

laticornis Marshall, 1908, op. cit., p. 122, pl. 19, figs. 99–101. [Marshall Collection]

lautus Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 172–176, pl. 1, figs. 1–5.

magnicaudatus Marshall, Trans. Amer. Micros. Soc., **28**: 123–124, pl. 20, figs. 106–108. [Marshall Collection]

major Marshall, 1908, op. cit., pp. 128–129, pl. 21, figs. 118–120, pl. 22, fig. 121. [Marshall Collection]

maryellenae Cook, 1954, op. cit., **73**: 57, pl. 4, figs. 40, 44. [C.N.H.M. Collection]

neosuperior Cook, 1954, op. cit., p. 56, pl. 4, figs. 37–38. [C.N.H.M. Collection]

pinguisomus Cook, 1954, op. cit., pp. 44, 46, pl. 1, figs. 9, 12. [C.N.H.M. Collection]

pistillatus Marshall, 1908, op. cit., **28**: 119–120, pl. 18, figs. 90–92. [Marshall Collection]

planus Marshall, 1908, op. cit., pp. 115–116, pl. 16, figs. 75–76. [Marshall Collection]

subsp. *ventropetiolatus* Lavers, 1945, op. cit., **64**: 250–251, pl. 4, figs. 39–42, pl. 6, fig. 59. [Marshall Collection]

platy-rotundo-cuspidator Münchberg, 1951, Arch. Hydrobiol., **45**: 383–388, figs. 1–8.

pleopetiolatus Marshall, 1944, Amer. Midl. Nat., **31**: 635, 637, pl. 3, figs. 12–16. [Marshall Collection]

pollictus Marshall, 1910, Trans. Amer. Micros. Soc., **29**: 106–107, pl. 1, figs. 9–10, pl. 3, figs. 25–28. [Marshall Collection]

pseudosuperior Cook, 1954, op. cit., **73**: 55–56, pl. 4, figs. 41–42. [C.N.H.M. Collection]

reflexus Marshall, 1908, op. cit., **28**: 117–118, pl. 17, figs. 84–86. [Marshall Collection]

serratus Marshall, 1919, op. cit., **38**: 276, pl. 29, figs. 1–7. [Marshall Collection]

superior Marshall, 1908, op. cit., **28**: 124–125, pl. 20, figs. 109–111. [Marshall Collection]

tacomaensis Marshall, 1924, Trans. Wis. Acad. Sci., **21**: 213–214, pl. 7, figs. 1–5. [Marshall Collection]

tetratumuli Münchberg, 1953, Zool. Jahrb. (Syst.), **82**: 51–56, figs. 1–9.

trifoliatus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 115, pl. 15, figs. 72–74. [Marshall Collection]

wallensis Cook, 1954, op. cit., **73**: 57–58, pl. 4, figs. 36, 43. [C.N.H.M. Collection]

wolcotti Marshall, 1908, op. cit., **28**: 118–119, pl. 17, fig. 87, pl. 18, figs. 88–89. [Marshall Collection]

Incertae sedis

The names listed below represent species that cannot be entered in the modern taxonomic system because of the inadequacy of the descriptions. The species are listed in alphabetical order.

Arrhenurus acerformis Marshall, 1924, Trans. Wis. Acad. Sci., **21**: 215, pl. 8, figs. 8, 9, 13. [Marshall Collection]

Arrhenurus hirsutus Marshall, op. cit., p. 215, pl. 8, figs. 10–12. [Marshall Collection]

[This and the previous species of *Arrenurus* are based only on females and cannot be properly entered into the generic system.]

Hydrachna coccinea Haldeman, 1843, Proc. Acad. Nat. Sci. Philadelphia, **1**: 196. [Probably Hydryphantidae.]

Hydrachna nebulosa Haldeman, op. cit., p. 196. [Not *Hydrachna*.]

Hydrachna pyriformis Dana and Whelpley, 1836, Amer. Jour. Sci., (1), **30**: 358–359, pl. 1, fig. 9. [Probably *Unionicola*.]

Hydrachna scabra Haldeman, 1843, Proc. Acad. Nat. Sci. Philadelphia, **1**: 184. [*Hydryphantes?*]

Hydrachna triangularis Say, 1821, Jour. Acad. Nat. Sci. Philadelphia, **2**: 59. [Probably *Unionicola*.]

Hydrachna tricolor Packard, 1871, Amer. Jour. Sci., (3), **1**: 108. [There is no clue to the genus of this species in the description.]

Hydrachna 5-*undulata* Haldeman, 1843, Proc. Acad. Nat. Sci. Philadelphia, **1**: 184. [*Limnesia?*]

Steganaspis arrenuroides Wolcott, 1901, Trans. Amer. Micros. Soc., **22**: 105–109, pl. 21, figs. 1–6. [A larval description that cannot be placed in a taxonomic system that is based on adult characters.]

Unionicola humerosa Haldeman, 1842, Zool. Contr., **1**, (1), p. 2, pl. 1, fig. 11.

Unionicola lactea Haldeman, 1842, op. cit., p. 1, pl. 1, figs. 6–8.

Unionicola lugubris Haldeman, 1842, Zool. Contr., **1**, (1), p. 2.

Unionicola oviformis Haldeman, 1842, op. cit., p. 1, pl. 1, figs. 1–5.

Unionicola personata Haldeman, 1842, op. cit., p. 2, pl. 1, fig. 10.

Unionicola proxima Haldeman, 1842, op. cit., p. 2.

Unionicola reticulata Haldeman, 1842, op. cit., p. 3, pl. 1, fig. 9.

Unionicola symmetrica Haldeman, 1842, op. cit., p. 2.

Unionicola unicolor Haldeman, 1842, op. cit., p. 3.

[The preceding nine species are all defined on color differences. I agree with Wolcott (1899, p. 233) that these species are likely to be *U. ypsilophora* Bonz.]

Rejected Records

Records of Old World species from the New World that cannot be verified or properly assigned are listed here.

Leidy, 1883, Proc. Acad. Nat. Sci. Phila., **35**: 44–46. *Atax* [*Unionicola*] *bonzi* Claparédè is cited and probably represents an erroneous identification. There is no other record of the species from the New World.

Crowell, 1952, Jour. Elisha Mitchell Sci. Soc., **68**: 191–196, 2 pls. Seven Palearctic species are recorded for the first time from North America. Neither the illustrations nor the text gives significant specific features. I have examined the slides and cannot see specific characters.

Atractides (*Torrenticola*) *anomalus*, op. cit., p. 192.

Aturus intermedius, op. cit., p. 193.

Hygrobates fluviatilis, op. cit., pp. 192–193.

Lebertia natans, op. cit., p. 192.

Megapus (*Atractides*) *walteri*, op. cit., p. 193.

Sperchon longirostris, op. cit., p. 192.

Sperchon squamosus, op. cit., p. 191.

Bergstrom, 1953, Trans. Amer. Micros. Soc., **72**: 157–162. Forty species are listed, four of them recorded from North America for the first time. Many of the specimens on which these records are based have been examined and the technique of slide preparation is such that reliable specific identifications are impossible. I reject all the records but list only the species new to North America.

Eylais wilsoni, op. cit., p. 158.

Piona nodata, op. cit., p. 161.

Piona nodata laminata, op. cit., p. 161.

Piona uncata, op. cit., p. 161.

Additional Type Material in the Marshall Collection

The species listed below were described by Marshall from outside of North America and are represented by type material in the Marshall Collection.

Arrenurus asiaticus Marshall, 1919, Trans. Amer. Micros. Soc., **38**: 276–277, pl. 29, figs. 8–10—China.

Arrenurus distinctus Marshall, 1919, op. cit., p. 277, pl. 30, figs. 14–16—China.

Arrenurus epimerosus Marshall, 1919, op. cit., pp. 278–279, pl. 31, figs. 25–28—Brazil.

Arrenurus geei Marshall, 1921, Trans. Amer. Micros. Soc., **40**: 172, pl. 11, figs. 26–29—China.

Arrenurus habanicus Marshall, 1927, Trans. Ill. Acad. Sci., **19**: 198—Cuba.

Arrenurus maderius Marshall, 1919, Trans. Amer. Micros. Soc., **38**: 279, pl. 31, figs. 29–32—Brazil.

Arrenurus merrilli Marshall, 1919, op. cit., pp. 277–278, pl. 30, figs. 17–18—Brazil.

Arrenurus pisciscaudapetiolatus Marshall, 1928, Trans. Wis. Acad. Sci., **23**: 605, pl. 15, figs. 20–25—China.

Arrenurus quadricornicus Marshall, 1919, Trans. Amer. Micros. Soc., **38**: 279–280, pl. 31, figs. 33–37—British Guiana.

Arrenurus scapulatus Marshall, 1910, op. cit., **29**: 98–99, pl. 1, figs. 2–6—Belgian Congo.

Arrenurus soochowensis Marshall, 1921, op. cit., **40**: 171, pl. 11, figs. 22–25—China.

Arrenurus triconicus Marshall, 1919, op. cit., **38**: 278, pl. 30, figs. 19–24—British Guiana.

Arrenurus valencius Marshall, 1919, op. cit., p. 277, pl. 29, figs. 11–13—Venezuela.

Hydrachna nova Marshall, 1928, Trans. Wis. Acad. Sci., **23**: 601–602, pl. 13, figs. 1–4—China.

Hydrachna simulans Marshall, 1928, op. cit., p. 602, pl. 14, figs. 16–18—China.

Koenikea indistincta Marshall, 1936, Carnegie Inst. Wash. Pub., no. 457, p. 134, figs. 1–5—Yucatan.

Limnesia koenikei var. *asiatica* Marshall, 1928, op. cit., p. 604, pl. 14, figs. 13–15—China.

Neumania cenotea Marshall, 1936, Carnegie Inst. Wash. Pub., no. 457, pp. 133–134, figs. 6–8—Yucatan.

Neumania geei Marshall, 1928, Trans. Wis. Acad. Sci., **23**: 603–604, pl. 14, figs. 10–12—China.

Piona erratica Marshall, 1940, Trans. Amer. Micros. Soc., **59**: 377–378, pl. 2, figs. 8–11—Argentina.

Piona marianaensis Marshall, 1927, Trans. Ill. Acad. Sci., **19**: 198—Cuba.

Piona pearsei Marshall, 1936, Carnegie Inst. Wash. Pub., no. 457, pp. 134–135, figs. 9–14—Yucatan.

Xystonotus torrei Marshall, 1927, Trans. Ill. Acad. Sci., **19**: 198–199—Cuba.

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Index

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